

1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MEMBRANE POTENTIAL IN THE SULFURIC ACID, BUTANOL SULFURIC ACID
SYSTEM -U-
AUTHOR--LICHIS, YA.
COUNTRY OF INFO--USSR
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 122-3
DATE PUBLISHED-----70
SUBJECT AREAS---CHEMISTRY
TOPIC TAGS--ELECTROMOTIVE FORCE, SULFURIC ACID, BUTANOL, MERCURY COMPOUND,
ELECTRODE POTENTIAL, ELECTROLYTE, SODIUM COMPOUND, POTASSIUM COMPOUND,
LITHIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0535 STEP NO--UR/0464/70/000/001/0122/0123
CIRC ACCESSION NO--AP0107140
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107140

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MEMBRANE POTENTIAL WAS MEASURED BY DETG. THE EMF. OF THE SYSTEM: $Hg-Hg \text{ SUB2 SO SUB4 (A SUB2 SO SUB4-C SUB1) BUOH MEMBRANE (A SUB2 SO SUB4-C SUB2)Hg-Hg SUB2 SO SUB4}$, WHERE A IS H PRIME POSITIVE, NA PRIME POSITIVE, K PRIME POSITIVE, LI PRIME POSITIVE, OR NH SUB4 PRIME POSITIVE IN AQ. SOLN. IN CONC. C SUB1 AND C SUB2, RESP. WHEN C SUB2 INCREASED FROM 0.02 TO 1M AND C SUB1 WAS CONST. AT 0.01M, THE MEMBRANE POTENTIAL OF BUOH (WITHOUT PRIOR EXTN. WITH H SUB2 SO SUB4) INCREASED: NA SUB2 SO SUB4 6-35, LI SUB2 SO SUB4 5-23, (NH SUB4) SUB2 SO SUB4 6-28, AND H SUB2 SO SUB4 11-64 MV. SIMILARLY, BUT WITH PRIOR EXTN. OF THE BUOH WITH H SUB2 SO SUB4, THE MEMBRANE POTENTIAL WITH H SUB2 SO SUB4 ELECTROLYTE WAS 6-48 WHEN THE ELEC. RESISTANCE WAS 5 TIMES 10 PRIME NEGATIVES AND 4-22 MV WHEN THE ELEC. COND. WAS 5 TIMES 10 PRIME NEGATIVE4 OHM PRIME NEGATIVE1 CM PRIME NEGATIVE1, RESP. THUS, THE MEMBRANE POTENTIAL IS A FUNCTION BOTH OF THE RATIO OF CONCNS. C SUB2-C SUB1 AND THE ELEC. COND. OF THE MEMBRANE. THE ELEC. COND. VARIES WITH THE DEGREE TO WHICH THE H SUB2 SO SUB4 TREATMENT REDUCES THE DIFFUSION POTENTIAL WITHIN THE MEMBRANE.

UNCLASSIFIED

Acc. Nr: **AP0047119**

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikiatrii, 1970,
Vol 70, Nr 2, pp 276-277

PROTRACTED (UNAFFECTED BY GLUCOSE) INSULIN COMA,
ITS CAUSE, CLINICAL PICTURE AND TREATMENT

Lichko, A. Ye.; Braverman, L. B.

The paper concerns an analysis of 22 cases of protracted insulin comas, developing in the process of insulin shock therapy of psychoses. The main cause for protracted comas the authors consider an unjustified increase and prolongation of a usual medicative hypoglycemic coma. The presuppositional factors appear to be an overdosage of insulin and a sensitization to it. The combination of insulin with aminazine or barbiturates on the whole is not dangerous but makes difficult the diagnosis of the profoundness of an usual hypoglycemic coma. The clinical picture of protracted comas can be differentiated from the usual hypoglycemic ones by the absence of abundant perspiration, a development of hyperthermia and by signs of noncellular dehydration. Protracted comas are frequently complicated by decerebrated rigidity, disorders of respiration, lung edema and pneumonia. The reason for lethal outcomes may be cerebral and subarachnoidal hemorrhages during severe tonic convulsions. During such conditions hyperglycemia which is usually connected with an abundant

REEL/FRA
19790611

AP0047119

introduction of glucose and sugar should not be avoided. As a treatment method the authors recommend, despite the existence of hyperglycemia, an introduction of big dosages of glucose (intravenous and subcutaneously) and sugar through a probe. Against dehydration the authors advise a physiological (but not hypertonic) solution of NaCl. In clonic convulsions — an intravenous introduction of amyta sodium is recommended. The authors are against supplementary injections of small doses of insulin in hyperglycemia and against the use of amyl-nitrite and warn against the use of corazol and camphora.

7/2

19790612

Be

LIDAK M. Yu.

Acc. Nr:

AP0049745

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:

U R O V O 9

100390g Chemistry of ethylenimine. III. Interaction of 1-aminoethylenimine with the simplest aliphatic aldehydes and acrolein. Hillers, S.; Ereemeev, A. V.; Lidak, M. (Inst. Org. Sin., Riga, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 1-7 (Russ). The condensation reaction of 1-aminoethylenimine (I) with AcH, propionaldehyde, butyraldehyde, and acrolein, resp., and the isomerization of the resulting hydrazones (II) to azines MeCH:NN:CHR (III) was studied and the products were

GILLER S.A. DNNCHR (II)
YEREMEYEV
A.V.

1/2

REEL/FRAME
19801655

7

AP0049745

identified by ir and NMR spectra. Thus, 0.1 mole $RCHO$ ($R = Me, Et, Pr$) was slowly added to 0.1 mole I in 25 ml Et_2O at 0° and the mixt. kept 2 hr at room temp., dried, and analyzed by gas-liq. chromatog. The following II were obtained (R , b.p., d_4^{20} , and n_D^{20} given): Me , $87-8^\circ$, 0.8752 , 1.4412 ; Et , $118-20^\circ$, 0.8759 , 1.4430 ; Pr , $152-4^\circ$, 0.8764 , 1.4442 . Similar reaction of freshly distd. and stabilized acrolein with I in abs. $EtOH$ with a small amt. of $PrCO_2H$ gave 20-5% II ($R = CH_2CH_3$), b. $136-7^\circ$, d_4^{20} 0.9512 , n_D^{20} 1.5210 . Although II were more stable than I , they were partially isomerized to III on standing at room temp. By preparative gas-liq. chromatog., the following III were obtained (R , b.p., d_4^{20} , and n_D^{20} given): Me , $92-3^\circ$, 0.8356 , 1.4404 ; Et , $126-8^\circ$, 0.8362 , 1.4456 ; Pr , $150-62^\circ$, 0.8376 , 1.4482 . By chromatog. on Al_2O_3 , it was shown that the asym. III did not disproportionate to mixts. of sym. III (Ioffe *et al.*, *CA* 68: 86781u) under the conditions used. V. Stepan

2/2

di

19801656

Acc. Nr:

AP0049783

Abstracting Service:

CHEMICAL ABST. 5/75

Ref. Code:

2180409

LIDAK M.Yu

100391h Chemistry of ethylenimine. IV. Hydrolysis of the 1-aminoethylenimine ring under the action of sulfonyl halides. Hiliers, S.; Eremshev, A.V.; Lidaks, M.; Pestunovich, V. A. (Inst. Org. Syn., Riga, USSR). *Dokl. Akad. Nauk SSSR*, 1970, 17, 8-11 (Russ.). In the reaction of 1-aminoethylenimine (I) with $RC_6H_4SO_2Cl$ (II), the aziridine ring was opened to give substituted 1-(8-chloroethyl)-2-(phenylsulfonyl)hydrazines $RC_6H_4SO_2NHNH(CH_2)_2Cl$ (III) as the main products. The structure of III was supported by NMR ir, and uv spectra, and synthesis. Slow addn. of 0.02 mole I in 10-15 ml abs. EtOH to a stirred soln. of 0.02 mole II in 10-15 ml abs. EtOH at -10° , stirring 1 hr at -10° , warming up to $20-2^\circ$, stirring 0.5-2 hr at that temp., filtering the ppt. in an inert atm., and drying in desiccator gave the following III [R and m.p. (EtOH) given]: H, 103-5°; p-Me, 200-1°; p- NO_2 , 145-7°. Satg. a soln. of 0.1 mole I in 50 ml abs. EtOH with dry HCl in an inert atm. at gradually elevated temp. from -30° to 20° gave $ClCH_2CH_2NHNH_2 \cdot HCl$ (IV), m. 34-6° (EtOH-EtO). The reaction of IV with II catalyzed by NaOH also gave III. On standing at room temp., III slowly decompd. to deeply colored oils, in which the presence of N:N groups was proved by ir spectra. The hydrolysis of these oils gave $PhSO_3H$. Similar changes were obsd. in the reaction of Br with III in EtOH soln. The oxidn. of III to azo compds. took place. V. Stepan

QULLER S.A
YEREMSEV A.V

1/1

REEL/FRAME
19801701

nt 7

LIDEMAN, R. R.

BIOLOGICAL FACTORS IN SCHIZOPHRENIA

Article by G.I. Kolyasnik, R.R. Lideman, D.V. Litsynskiy, B.D. Orlovskiy, Institute of Psychiatry, USSR Academy of Medical Sciences, Moscow, Vsesoyuznyy Nauchnyy Tsentr Meditsinskikh Nauk SSSR, Moscow, No 5, May 1971, pp 59-62

501 JPRS 53376

16 CHS 71

16 (1971) 5

An attempt is made in this article to summarize the results of multidisciplinary investigation of the biological distinctions of the organism of schizophrenics, and first of all of the biological distinctions of their blood as related to the type of course of this disease. The premise for such a summary consisted of the earlier work by the present authors and other members of the laboratory of general pathophysiology of the Institute of Psychiatry, USSR AMN, which demonstrated that in the blood serum of schizophrenics there are anomalous metabolites involved in formation of some important links in the pathogenesis of this disease. Distinctive immunological changes were demonstrated, as well as functional and morphological changes in formed blood elements (M.Ye. Vartanyan, 1969).

All of the biological studies were conducted on homogeneous clinical material. The patients were under standard clinical conditions and had not received therapy for at least three weeks prior to the study. They were selected in accordance with the classification adopted at the Institute of Psychiatry, USSR AMN, in which schizophrenia is divided into continuous, sporadic-progressive, and periodic (frequent) types; in turn, continuous schizophrenia is subdivided into malignant (nuclear), paramold, and sluggish forms. The results of the biological tests were compared with the clinical characteristics reflecting the distinctive features in the course of the disease.

All of the results of investigation of the manifestations of biological activity of blood serum of schizophrenics could be subdivided into two main groups; the first includes effects typical for the biological action of blood serum of patients with all three types of schizophrenia (continuous, sporadic [in attacks] progressive, and periodic); and the second consisted of effects typical only for the action of serum from patients with continuous schizophrenia.

1/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CHANGES IN THE ULTRASTRUCTURE OF NEURONS OF THE UPPER CERVICAL
SYMPATHETICAL GANGLION IN CATS WITH THE INTRODUCTION OF THE BLOOD SERUM
AUTHOR--(03)-SOLOVYEVA, ZH.V., KHAKHANOVA, N.L., LIDEMAN, R.R.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 4, PP 584-592
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEURON, GANGLION, CAT, BLOOD SERUM, SCHIZOPHRENIA,
MITOCHONDRION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REF/FRAME--1988/1543

STEP NO--UR70246/70/070/004/0584/0592

CIRC ACCESSION NO--APC106290

UNCLASSIFIED

2/2 021
CIRC ACCESSION NO--AP0106290

UNCLASSIFIED

PROCESSING DATE--02NOV79

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED THE ACTION POTENTIALS IN THE SUPERIOR CERVICAL SYMPATHETIC GANGLION AND ITS ULTRASTRUCTURE IN CATS IN INTRA ARTERIAL INTRODUCTION OF THE BLOOD SERUM OF NORMALS, OF PATIENTS WITH SHIFT LIKE SCHIZOPHRENIA AND NUCLEAR SCHIZOPHRENIA. THE SERUM OF NORMALS SOMEWHAT INCREASED THE AMOUNT OF LYSOSOMES IN THE NERVOUS CELLS AND DID NOT CHANGE THE ACTION POTENTIAL OF THE GANGLION. ELECTRON MICROSCOPICAL CHANGES IN INTRODUCTION OF THE SERUM OF SHIFT LIKE SCHIZOPHRENICS WERE EXPRESSED IN AN EVEN MORE INCREASE IN THE AMOUNT OF LYSOSOMES, A DISTINCT SWELLING OF THE MITOCHONDRIA AND A DESTRUCTION OF THE CRISTS, IN AN EXPANSION OF THE ENDOPLASMATICAL NETWORK, A RAREFACTION OF THE NUCLEAR MATRIX AND A FRAGMENTATION OF THE GOLGI APPARATUS. IN SUCH CONDITIONS THERE WAS A SIGNIFICANT DECREASE IN THE AMPLITUDE OF THE ACTION POTENTIAL IN THE GANGLION. THE SERUM OF PART OF THE PATIENTS WITH NUCLEAR FORMS OF SCHIZOPHRENIA BROUGHT ON A DENSIFICATION OF THE NUCLEAR MATRIX AND NUCLEOLI, A FRAGMENTATION AND A NARROWING OF THE APERTURE OF CYSTERNI IN THE ENDOPLASMATICAL NETWORK, A DENSIFICATION IN PART OF THE MITOCHONDRIA WITH A DESTRUCTION OF THE CRISTS AND A DECREASE IN THE AMOUNT OF ATTACHED RIBOSOMES. THE AMOUNT OF LYSOSOMES INCREASED SIGNIFICANTLY. THE NEGATIVE PHASE IN THE ACTION POTENTIAL IN THE GANGLION DECREASES SIGNIFICANTLY AND WAS NOT COMPLETELY RESTITUTED. THE SERUM OF THE OTHER PART OF PATIENTS OF THIS GROUP DID NOT INFLUENCE SIGNIFICANTLY THE ULTRASTRUCTURE ON THE ACTION POTENTIAL OF THE GANGLION.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--COMPENSATORY ACTION OF VITAMIN K ON THE ACTIVITY OF DIGESTIVE
EXDENZMES, DERANGED IN ANIMALS WITH E VITAMIN DEFICIENCY -U-
AUTHOR--LIDER, V.A.
COUNTRY OF INFO--USSR
SOURCE--VGPROSY PITANIYA, 1970, NR 3, PP 41-43
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIGESTIVE SYSTEMS, ENZYME ACTIVITY, VITAMIN DEFICIENCY,
PANCREAS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0008 STEP NO--UR/0244/70/000/003/0041/0043
CIRC ACCESSION NO--AP0120708
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVITY OF DIGESTIVE ENZYME (PANCREATIC AMYLASE AND LIPASE; INTESTINAL ENTEROKINASE) WAS STUDIED IN 35 ALBINO MALE RATS. IN RATS E VITAMIN DEFICIENCY WAS FOUND TO BE ATTENDED BY A DRASTIC DROP OF ACTIVITY OF ALL ENZYMES UNDER REVIEW. AN ADDITION OF ALPHA TOCOPHEROL TO THE E VITAMIN DEFICIENT DIET AVERTED DEVELOPMENT OF E AVITAMINOSIS IN RATS. SUPPLEMENTARY INTRODUCTION OF VITAMIN K (VICASOL) SUBCUTANEOUSLY IN AN AMOUNT OF 1.0 MG TO ANIMALS MAINTAINED ON A E VITAMIN DEFICIENT DIET PRODUCED A STATISTICALLY SIGNIFICANT COMPENSATORY EFFECT ON THE ACTIVITY OF PANCREATIC ENZYMES (AMYLASE AND LIPASE), EXERTING, HOWEVER, PRACTICALLY NO INFLUENCE ON THE ACTIVITY OF ENTEROKINASE. FACILITY: KAFEDRA BIOKHIMII ALTAYSKOGO MEDITSINSKOGO INSTITUTA, BARNAUL.

UNCLASSIFIED

USSR

UDC: 546.33'42'284

GABYEV, R. M., KUZNETSOV, V. A., LIBER, V. V., ILYUKHIN, V. V., and BELOV, N. V., Institute of Crystallography, Academy of Sciences, USSR

"Synthesis and Certain Properties of Calcium-Sodium Silicate Single Crystals"

Moscow, Neorganicheskiye Materialy, Vol 6, No 2, Feb 70, pp 398-399

Abstract: The formation of calcium-sodium silicate phases is discussed, and a table illustrating their formation in the $\text{CaO}-\text{SiO}_2-\text{NaOH}$ system is given. Analysis of the first phase, using the LKHA-3-type diffraction microanalyzer, gave the following results: CaO , 34.8%; SiO_2 , 46%; Na_2O , 22%. Spectral analysis confirmed the given composition. The formula of the first phase may be written as $4\text{CaO} \cdot 5\text{SiO}_2 \cdot 2\text{Na}_2\text{O}$. The second phase of the composition $\text{Na}_2\text{CaSi}_2\text{O}_6$ was mentioned in earlier research and the given lattice parameters as well as the set of the interplanar spacings agree with the data of this study. Phase $4\text{CaO} \cdot 5\text{SiO}_2 \cdot 2\text{Na}_2\text{O}$ precipitates in the form of large, well formed single crystals of prismatic habit. The specimen features one sufficiently clearly pronounced and readily reproducible endothermic effect in the 980°C region; this effect is not attended by evolution of gaseous products and weight loss. It is suggested that the phase $4\text{CaO} \cdot 5\text{SiO}_2 \cdot 2\text{Na}_2\text{O}$ has no structural water and has a polymorphous transition in the 980°C region.

1/1

- 71 -

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SYNTHESIS AND SOME PROPERTIES OF CA NA SILICATE SINGLE CRYSTALS -U-
AUTHOR--(05)-GANIYEV, R.M., KUZNETSOV, V.A., LIDER, V.V., ILYUKHIN, V.V.,
BELOV, N.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 398-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SILICATE, CALCIUM COMPOUND, SODIUM COMPOUND, CHEMICAL
SYNTHESIS, SINGLE CRYSTAL, PHASE ANALYSIS, CRYSTAL STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY SEEL/FRAME--1988/0606 STEP NO--UR/0363/70/006/002/0398/0399
CIRC ACCESSION NO--AP0105589
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105589

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS FOR THE FORMATION OF CA NA SILICATE PHASES IN THE CaO MINUS SiO_2 MINUS $NaOH$ SYSTEM WERE STUDIED. THE PHASES $4CaO \cdot 5SiO_2 \cdot 2Na_2O$ AND $Na_2Si_2O_5$ SUB3 O SUB8 WERE PRESENT IN THIS SYSTEM, AS DETD. BY ELECTRON MICROPROBE ANAL. THE LATTICE PARAMETERS AND INTERPLANAR SPACINGS OBTAINED FOR THESE PHASES AGREE WELL WITH PREVIOUSLY REPORTED DATA. THE PHASE $4CaO \cdot 5SiO_2 \cdot 2Na_2O$ PPTS. OUT IN THE FORM OF COARSE (1-3 MM) AND WELL FORMED SINGLE CRYSTALS OF PRISMATIC HABIT; IT HAS A D. OF 2.872 G-CM PRIME3. ITS OPTICAL CONSTS. WERE ALSO DETD. DTA DATA SHOW THE PRESENCE OF AN ENDOTHERMIC EFFECT AT 980DEGREES, WHICH IS NOT ACCOMPANIED BY THE PPTN. OF GASEDUS PRODUCTS OR WT. LOSSES. THIS INDICATES THAT THE $4CaO \cdot 5SiO_2 \cdot 2Na_2O$ PHASE DOES NOT CONTAIN STRUCTURAL WATER AND THAT IT EXHIBITS A POLYMORPHIC TRANSITION AT SIMILAR TO 980DEGREES.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--KINETICS OF THE DECOMPOSITION OF SOLID SOLUTION OF ARSENIC IN
GERMANIUM -U-
AUTHOR--(05)--ARSENTYEVA, I.P., GRINSHTEYN, P.M., LIDER, V.V., MURAVLEV,
YU.B., RYZHANSKIY, V.N.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1260-1
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL KINETICS, SOLID SOLUTION, ARSENIC ALLOY, GERMANIUM
ALLOY, SINGLE CRYSTAL, HALL CONSTANT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0373 STEP NO--UR/0181/70/012/004/1260/1261
CIRC ACCESSION NO--AP0126128
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NU--AP0126128

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE CRYSTALS OF GE WERE INVESTIGATED WHICH CONTAINED 3.6×10^{19} PRIME19 ATOMS AS-CM PRIME3. THE CONCN. OF CURRENT CARRIERS WAS CALCD. FROM THE HALL COEFF. MEASURED BY THE COMPENSATION METHOD AT CONST. CURRENT. A KINETIC CURVE IS GIVEN OF THE DECCMPN. OF THE SOLID SOLN. OF AS IN GE AT 550DEGREES. IT WAS OBTAINED FROM THE DATA ON THE CONCN. OF CURRENT CARRIERS AS A FUNCTION OF THE TIME OF ANNEALING. THE CURVE CONSISTS OF 3 LINEAR SECTIONS. IN THE 1ST SECTION NUCLEI ARE FORMED AND THEIR NO. INCREASES WITH TIME, SECTION 2 REPRESENTS A DIFFUSION LIMITING PROCESS OF GROWTH OF PLATELIKE SEPS., AND IN SECTION 3 THE PROCESS OF SEPN. IS SLOWED DOWN BECAUSE OF COALESCENCE OF THE PARTICLES. FACILITY: GOS. RAUCH. ISSLED. PROEKT. INST. REDKOMETAL. PROM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.762.001:669.27

TRET'YAKOV, V. I., PIVOVAROV, L. Kh., NOVIKOVA, M. B., LIDER, V. Ya.,
NOVIKOVA, T. A., VRZESHCH, Ye. Ya., and KARASEV, G. F.

"Influence of Surface Layer on Plates of Titanium-Tungsten Hard Alloys
on Wear Resistance During Cutting"

Sb. tr. Vses. n.-i. i proyekt. in-t tugoplavk. met. i tverd. splavov
[Collected Works of All-Union Scientific Research and Planning Institute
for Refractory Metals and Hard Alloys], No. 10, 1970, pp. 55-60
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract
No. 2 G413 by the authors)

Translation: Results are described from determination of the resistance
factor to cutting of specimens of titanium-tungsten hard alloys, when
layers of altered composition and structure are formed on the cutting
edges with certain sintering modes. It is established that the presence
of surface layers on the cutting edges of the cutting plates increases
their wear resistance during cutting by an average of 1.6 times.
2 figures; 2 tables; 3 biblio. refs.

1/1

- 33 -

PUBLICATIONS

USSR

BABADZHANOV, M. M., and LIDSKIY, Ya. V. Osnovy Meditsinskoy Sluzhby Grazhdanskoy Oborony (Fundamentals of the Civil Defense Medical Service), Tashkent,

"Meditsina," 1970, 140 pp

Translation: Annotation: The book contains explanations of problems of organizing formations of the civil defense medical service, discusses the work of personnel in sanitary teams (or detachments from these teams) in giving first aid in various centers of mass casualties and the volume of this care, the tactics of a first aid detachment in various centers of mass casualties and the work of its functional subdivisions in giving initial medical care to victims, the work of specialized treatment institutions based in hospitals in offering specialized medical care to victims, and sanitary-hygiene and antiepidemic measures in centers of mass casualties.

The work is intended for a broad range of ordinary medical workers.

Foreword: Considering the aggressive intentions of the imperialist forces and their preparations for a nuclear missile war, the Communist Party and the Soviet Government are taking all necessary steps to strengthen the military might of our state.

Civil defense takes on great significance in raising the defensive capability of our homeland under modern conditions. It was created to protect

1/4

USSR

BABADZHANOV, M. M. and LIDSKIY, Ya. V., "Meditsina" 1970, 140 pp

the population and national economy of the country against weapons of mass destruction.

In the Official Report of the CPSU Central Committee to the 23rd CPSU Congress, Comrade L. I. Brezhnev said, "It is necessary to improve civil defense and military-patriotic work among the working people, especially young people, to strengthen the sponsorship relationships of enterprise, educational institutions, kolkhoz and sovkhoz workers' collectives with military units and subunits, and to show greater concern for the soldiers and officers of the Soviet Army and their families. The entire party and all Soviet society are obliged to constantly work on this matter" (Materialy XXIII S"yezda KPSS [Materials of the 23rd CPSU Congress], Political Publishing House, 1966, p 78).

In this book, the authors have thrown light on the questions of organizing formations of the civil defense medical service and training their personnel, organizing first aid and the activity of sanitary team (or detachment) personnel in various centers of mass casualties, organizing first medical care and the actions of first aid detachments in centers of mass casualties, organizing specialized care for victims in specialized hospitals of the civil defense medical service, and setting up sanitary-hygiene and antiepidemic steps in centers of mass casualties.

2/4

- 96 -

USSR

BABADZHANOV, M. M. and LIDSKIY, Ya. V., "Meditsina" 1970, 140 pp

In their presentation of the material, the authors have attempted to give special attention to the part of middle-level medical workers and to show the volume and nature of their work at all stages of medical evacuation.

In writing the book, they used widely-known, published materials.

The authors will be grateful for valuable advice and critical remarks on the substance of the material presented.

Table of Contents:

	Page
The Civil Defense Medical Service	5
Basic Missions of the Civil Defense Medical Service	5
Forces and Equipment of the Civil Defense Medical Service	9
Formations of the Civil Defense Medical Service	10
First Aid Detachment, Its Purpose, Staff, and Equipment	16
Mobile Antiepidemic Detachment	19
Specialized Medical Care Detachments and Brigades	29
Special Features of Centers of Mass Destruction	22
Fundamentals of Treatment and Evacuation Support for Victims in the Civil Defense Medical Service System	26

3/4

USSR

BABADZHANOV, M. M. and LIDSKIY, Ya. V., "Meditsina" 1970, 140 pp

Organizing First Aid in Centers of Mass Casualties	29
Organizing First Medical Care in Centers of Mass Casualties	56
Giving Specialized Medical Care to Victims	86
Hospital Collectors	87
Sanitary-Hygienic and Antiepidemic Measures in Centers of Mass Destruction	114

4/4

- 97 -

USSR

UDC 621.762.002.5(088.8)

DRUSHININ, L. K., LIEPINA, YE. D., KUVSHINOV, P. S., SIMONOV, L. P., SAFRONOV, B. V., PERFILOV, B. S., and TOKAREVA, L. I.

"Apparatus for Making Powders and Granules by Centrifugal Pulverization of Melt"

Ussr Authors' Certificate No 272501, Cl. 31 b³, 9/00; 49 1, 3, [B 22 f 9/00, B.05 b 3/127, filed 12 Sep 68, published 2 Sep 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G470P by G. Derkacheva)

Translation: An apparatus is suggested for making powders and granules by centrifugal pulverization of a melt. The apparatus consists of a rotating ring with a hole in the bottom for delivery of the material to be pulverized, a local heat source situated above this material, and a cooler which is unique in that, in order to increase powder and granule quality, it is rigidly fastened to the outside of the ring.

1/1

- 6 -

USSR

SHTEYNHLEYGER, VOL'F BENTSIONOVICH, MISEZHNIKOV, GEORGIY SOLOMONOVICH, and LIFANOV, PETR SERGEYEVICH

"UHF Quantum Amplifiers (Masers)," (Kvantovyye Usiliteli SVCh [Mazeryl]), Moscow, Izd-vo "Sovetskoye Radio," 1971, 9,000 copies, 432 pages

Abstract: The book is a monograph devoted to quantum UHF-maser paramagnetic amplifiers, the application of which makes it possible to achieve extremely high sensitivity in radio receiving devices operating in the UHF range. Along with a presentation of the physical bases of operation of such amplifiers, the methods for calculating, designing, and experimentally researching traveling wave masers and multiresonant masers, and also the problems of using masers in systems for space communications, radio astronomy, and radar are examined in detail. The necessary information concerning the main components of maser devices which include: paramagnetic crystals, delay systems, resonators, magnets with superconducting windings, low-temperature ferrites, cryostats, closed-cycle refrigerant equipment based on helium and intermediate temperatures, is presented.

The book is intended for engineers and scientific workers who are specializing in the field of development and application of low-noise UHF amplifiers,
1/5

USSR

SHTEYNHLEYGER, VOL'F BENTSIONOVICH, et al., "UHF Quantum Amplifiers (Masers)," (Kvantovyye Usiliteli SVCh [Mazeryl]), Moscow, Izd-vo "Sovetskoye Radio," 1971, 9,000 copies, 432 pages.

low-temperature technology, and quantum electronics. The book may also be useful to instructors, aspirants, and students of advanced courses of the corresponding specialities. The book has numerous illustrations, figures, and 425 citations.

The table of contents is as follows:

Foreword	page
From the authors	3
	4
Chapter 1. Physical Fundamentals of Operation of Quantum Paramagnetic Amplifier (Maser)	
1.1 Probability of Forced Transition	7
1.2 Action of Electromagnetic Oscillations in a System of Paramagnetic Particles	9
1.3 Energy Levels and Probability of Forced Transitions in Paramagnetic Crystals	15
2/5	31

USSR

SHTEYNHLEYGER, VOL'F BENTSIONOVICH, et al., "UHF Quantum Amplifiers (Masers)," (Kvantovyye Usiliteli SVCh [Mazeryl]), Moscow, Izd-vo "Sovetskoye Radio," 1971, 9,000 copies, 432 pages

1.4 Fundamental Maser Characteristics	39
1.5 The Effect of Strong Signals on the Maser	56
1.6 Maser Noise	69
1.7 Paramagnetic Crystals for Masers	76
Chapter 2. Traveling Wave Masers (TWM)	
2.1 Layout of Traveling Wave Maser	114
2.2 Delay Systems for TWM	114
2.3 Comb Delay System	117
2.4 Meander Line and Other Delay Systems	125
2.5 Widening the Pass Band of Traveling Wave Masers	180
2.6 Method of Experimenting When Developing TWM	191
2.7 Information Concerning Developed TWM	200
	207
Chapter 3. Multiresonant Masers	
3.1 Computing the Parameters of Multiresonant Masers	218
	219

3/5

USSR

SHEYNISLEYGER, VOL'F BENTSIONOVICH, et al., "UHF Quantum Amplifiers (Masers)," (Kvantovyye Usiliteli SVCh [Mazeryl]), Moscow, Izd-vo "Sovetskoye Radio," 1971, 9,000 copies, 432 pages

3.2 Maser Resonators	255
3.2 Problems of Developing Multiresonant Masers	274
Chapter 4. Superconducting and Permanent Magnets and Low Temperature Ferrites for Masers	
4.1 Uncooled and Cooled Permanent Magnets	289
4.2 Magnets with Superconducting Windings	290
4.3 Ferrite Devices for Masers	299
	314
Chapter 5. Elements of Cryogenic Technology	
5.1 Coolants for Masers	324
5.2 Cryostats	325
5.3 Refrigerant Machines for Masers	331
5.4 Linking Cooled Elements of a Maser with Refrigerant Closed-Cycle Machine	344
4/5	356

USSR

SHTEYNSHLEYGER, VOL'F BENTSIONOVICH, et al., "UHF Quantum Amplifiers (Masers)," (Kvantovyye Usiliteli SVCh [Mazeryl]), Moscow, Izd-vo "Sovetskoye Radio," 1971, 9,000 copies, 432 pages

Chapter 6. Some Problems of Utilizing Masers in Radio Receiving Systems

6.1	Masers in Space Communication Systems	363
6.2	Concerning the Use of Masers in Radio Astronomy	363
6.3	Maser Protection for Pulse Radar Operation	376
6.4	Measuring the Noise Temperature of a Maser and Radio Receiving Systems Containing a Maser	389
		395

Appendix

Energy Levels and Matrix Elements of Junctions in Paramagnetic Crystals Used in Masers

409

Bibliography

414

5/5

USSR

UDC 621.385.632 (086.8)

LIFERENKO, V.D. (Leningrad Electrical Engineering Institute)

"Delay System Of The 'Clover Leaf' Type"

USSR Author's Certificate No 290893, filed 8 July 68, published 27 Apr 71
(from RZh:Elektronika i yeye prizeneniye, No 2, Feb 72, Abstract No 2A166P)

Translation: A delay system of the "clover leaf" type is proposed which consists of a circular waveguide with sectoral projections [vystup] of the side walls, an iris with radial slots, and loaded oscillators connected with the working space through transverse coupling slots. In order to increase the coupling impedance and decrease its attenuation at the dominant mode of oscillations, the loaded oscillators are distributed within the sectoral projections outside the working space of the system.

1/1

- 65 -

USSR

UDC 621.372.8.092.22

VOLKOV, Ye. G., LIFERENKO, V. D., KORNILOV, A. A.

"A Wide-Band Periodic Traveling-Wave Decelerating System"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrical Engineering Institute), 1970, vyp. 96, pp 25-28 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7B132)

Translation: The paper demonstrates the feasibility of making decelerating systems with low variance and a broad frequency band on the basis of a "chain" line with geometric phasing of the field; the inner conductor of the line is formed by a sequence of rectangular brackets fastened to conductive or dielectric supports. The system has two bands of transparency, the upper band having a negative fundamental harmonic, and the low-frequency band existing only in the case of conductive supports. The computational results are experimentally confirmed. One illustration, N. S.

1/1

- 11 -

Epidemiology

USSR

ZAIROV, K. S., CHICHEVIN, P. I., MUHAMMEDOV, S. M., PULATOV, YA. G., II-GVAN-KHYA, INZHEVATOVA, K. V., ARTYKOV, K. A., and SEREDIN, V. G.

"Methods and Tactics to be Applied in Detecting Local Foci of Cholera"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 12, Dec 71, pp 3-7

Abstract: With the appearance of the El Tor variety of cholera, endemic foci of this disease developed in a number of countries in which classical cholera could not take root. The reason for this is the capacity of El Tor vibrios to survive for prolonged periods of time in the human organism and the environment. Local cholera foci come developed in which the circulation of the agent is sustained by a chain of atypical diseases, prolonged carrier state of the vibrios in humans, and possibly transmission of the infection by aquatic organisms. Discovery of the carrier state among persons with diseases of the bile secretion system led A. G. Nikenov (1960) to the conclusion that cholera vibrios may be retained for a long time in the gall bladder. He proved the correctness of this conclusion experimentally. During the recent cholera pandemic, vibrios were detected more frequently in the gall bladder. In cases of El Tor cholera, which is caused by hemolytic variation of the microorganism, it is advisable to determine the titer of antibiosis with reference to the hemolytic enzyme found in the supernatant liquid of

1/2

USSR

ZAIROV, K. S., et al., Meditsinskiy Zhurnal Uzbekistana, No 12, Dec 71, pp 3-7

of meat broth cultures. The complement fixation reaction, which has been used as an immunological test for cholera in Russia since 1939, has been forgotten for inadequate reasons. The very small amount of cholera vibrios present in the stool of cholera patients and vibrio carriers can be detected by means of suspended antibodies, among which alizarin, indanthrene, and anthragallo antibodies are used most frequently. Concentration of cholera vibrios on membrane filters follows by supplementary cultivation (Ye. V. Chibrikova, 1960, 1962) made it possible to increase greatly the sensitivity of the immunofluorescence method of detection. A. K. Adamov et al (1969) isolated El Tor vibrios from fish caught in rivers of Turkmenia. According to results obtained by the authors of this article, cholera vibrios may be detected in the intestine of fish even when tests on the water in which the fish have been caught are negative. Testing of fish is therefore recommended as a method for the detection of latent foci of cholera in bodies of water.

2/2

USSR

UDC: 621.396.6-181.5(088.8)

OREGIN, Ye. Ye., LIFLYAND, V. N., KUZ'MICHEV, G. P.

"A Method of Wireless Assembly of Semiconductor Devices"

USSR Author's Certificate No 269317, filed 24 Jun 68, published 13 Jan 71
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V272 F)

Translation: A method is proposed for noncontact assembly of semiconductor devices on a dielectric substrate. The method involves attaching the contact areas of the semiconductor crystal to the current-conducting lines of a printed circuit board, connecting the current-conducting lines to the external leads, and sealing the device. To improve the quality of the devices, a relief image is produced on the dielectric substrate, and a current-conducting paste layer is applied to the elements of this image.

1/1

USSR

UDC 615.385.1

VINOGRAD-FINKEL', F. R., Prof, TERENT'YEVA, E. I., Prof, SUKHOVA, A. G.,
VOROB'YEVA, G. S., TAL'SKAYA, I. N., ~~LIFLYANDSKIY, I. B.~~, DOROFYEVA,
T. N., and SAMSONOVA, N. N., Central Institute of Hematology and Blood
Transfusion (Prof A. Ye. Kiselev, Director), Ministry of Health USSR
and Institute of Cardiovascular Surgery (Prof V. I. Burakovskiy, Director),
Academy of Medical Sciences USSR (Moscow)

"Morphological and Biochemical Characteristics and Viability of Washed
Erythrocytes Intended for Surgical Procedures With Extracorporeal Circu-
lation"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971,
pp 3-7

Abstract: Erythrocytes were obtained after separation of plasma from donor
blood which had been kept in storage for 24 hours, washed with physiological
solution, and examined by the electron microscope method; unwashed erythro-
cytes from the same blood served as controls. After two washings the
submicroscopic organization of cells in the washed erythrocytes did not
differ essentially from that in the unwashed erythrocytes. The conclusion
1/2

USSR

VINOGRAD-FINKEL', F. R., et al., Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 3-7

was that washing the erythrocytes from blood prepared with a glucose-citrate preservative and stored for one day has no significant effect on the ultrastructure of almost the entire mass. Investigation of phosphorus fractions demonstrated the metabolic integrity of the washed erythrocytes through one or two washings. Thus, washing with physiological saline solution does not alter the structural completeness, metabolic activity, or biological value of erythrocytes. None of their indexes differ from those of erythrocytes of whole blood stored for 1 day and used for extracorporeal circulation in cardiac surgery; they should therefore be recommended as the basic component in perfusates for extracorporeal circulation.

2/2

Hematology

USSR

UDC 615.385.1.03:616.12-008.1-78

RUDAYEV, Ya A., FEDOROVA, L. I., LIFLYANDSKIY, D. B., BATUKAYEV, A. I., and SEMENOVA, N. V., Central Institute of Hematology and Blood Transfusion, Ministry of Public Health USSR, and Institute of Cardiovascular Surgery imeni Bakuleva, Academy of Medical Sciences USSR, Moscow

"Thawed Erythrocytes as A New Charge for Artificial Circulation Equipment"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 15, No 7, Jul 70, pp 3-5

Abstract: Whole donor blood has been used in equipment for artificial circulation, but substantial difficulties are encountered when such blood must be ready for administration at a given moment. To study the overall perfusion of thawed and washed erythrocytes in open-heart surgery, 250 ml of thawed erythrocytes was introduced with small doses of whole blood. It was found that satisfactory blood levels could be maintained. The hemoglobin content in the peripheral blood was 8%, and the number of thrombocytes was reduced. The erythrocytes, which had been preserved for long periods of time, appeared to be resistant to all traumas during perfusion. No operative hemolysis was observed. Further study of this highly effective medium (erythrocytes diluted in a low-molecular-weight medium) is recommended.

1/1

USSR

UDC: 519.24

KALINIKOV, Yu. S., LIFSHITS, A. L.

"On Some Modifications of an Algorithm of Global Statistical Search Over a Guiding Sphere"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization --collection of works), Riga, "Zinatne", 1971, pp 197-202 (from RZh-Kiber-netika, No 12, Dec 71, Abstract No 12V410)

Translation: Three modifications of an algorithm of global random search with a guiding sphere are considered. Experiments done on a two-dimensional multiple-extremum quality function show the effectiveness of these algorithms and an appreciable reduction in the time of finding the global extremum. Authors' abstract.

1/1

LIFSHITS, A. M.

SO: JARS 53272
02 JUNE 71

UDC: 61.001.11

METHODOLOGICAL ASPECTS OF THE PROBLEM OF DEFINING THE MAIN CONCEPTS IN MEDICINE
[Article by M. Yu. Akhmedzhanov, A. M. Lifshits (Yalta); Moscow, Vsesoyuznaya Akademiya Meditsinskikh Nauk SSSR, Kazan, no. 7, April 1971, pp 43-50]

The entire act of medicobiological concepts, both traditional and contemporary, today requires attentive analysis to define and reveal the content of these concepts now enriched by updated concrete material. Such analysis has important methodological functions in the development of medicobiological knowledge. The solution of this problem necessarily implies the development of some new approaches to the study of medicobiological concepts expressed by integral, systemic scrutiny of the conceptual apparatus of these sciences. In the last few years a number of works has been published dealing with analysis of medical concepts such as "norm," "health," "sickness," "etiology," "pathogenesis," "aging," etc.

In most of these works, analysis was usually made in relative isolation, without establishing general bases and deep correlations between isolated concepts. The elementaristic principle of analysis, i.e., considering their statistical unity and essence in full measure, does not permit demonstration of bases of logical unification of different element categories into systems meeting specific objectives of analysis as a means of reaching a higher level of cognition. This route is realized through a systemic approach which permits to investigate significantly, at the present stage, the development and to enrich the conceptual apparatus of medicobiological sciences.

We have made an attempt to disclose correlations between conjugate concepts such as "health," "disease," "medical rehabilitation," "aging," and to submit them as elements of a single system ("language" of concepts). This attempt emerged from the need for theoretical and methodological interpretation of the results of our research in the field of medical rehabilitation and epidemiology of cardiovascular disease. In this direction principles and criteria were developed that enabled us to reveal correlations and to make a systemic analysis of the chosen concepts, to formulate a definition thereof.

First let us briefly discuss some positions related to isolated (elementary) analysis of the concepts in question.

USSR

UDC 669.046.54

VASHCHENKO, A. I., SEN'KOVSKIY, A. G., LIPSHITS, A. Ye., and SHUL'TS, L. A.

Okisleniye i Obezuglerozhivaniye Stali (Oxidation and Decarburization of Steel), Moscow, 1972, Izd-vo Metallurgiya, 336 pp

Translation of Introduction: Steel items are produced mainly from ingots and billets by heating them to high temperature and applying high pressure (rolling, stamping, forging, and others). Thereafter a great number of items are subjected additionally to heat treatment. Both processes require heating of the metal in flame or electric furnaces to high temperatures. After heating, the metal interacts with the furnace atmosphere (with combustion products in the open-flame furnace, and with air in electric furnaces) and the ensuing reaction with gases-oxidizers leads to oxidation and decarburization of steel.

The oxidation of steel increases with the heating temperature, provided other conditions are equal. The pressure treatment of steel requires heating to high temperatures (1100-1300°C). As a result the oxidation is excessive. Under the best conditions about 1% of the metal undergoes oxidation and is lost in the form of scale, and in some cases the percentage reaches 1.5-2% or more during each heating.

1/14

USSR

VASHCHENKO, A. I., et al., *Okisleniye i Obezuglerozhivaniye Stali*, Moscow, 1972, Izd-vo Metallurgiya, 336 pp

Considering that during the production of steel items it is often necessary to heat the steel several times, the oxidation increases to 5-6% and the metal is lost as scale. However, the harm produced by oxidation does not end here. The scale which is formed on the metal surface damages high-pressure equipment and causes an excessive wear of it.

In cases when scale is rolled (during hot rolling) and stamped (during stamping) into the metal during the high-temperature treatment, the metal becomes unusable and is lost as scrap.

During production, for example, of sheet metal, thin-walled pipes, and other items, the scale is removed by pickling in special solutions. This complicates the production process and raises the price of parts produced by high-temperature treatment.

In addition to oxidation, the furnace gases also cause the decarburization of steel, which results in losses for the national economy. As a result of decarburization the quality of the metal's surface layer is low. In

2/14

- 52 -

USSR

VASHCHENKO, A. I., et al., *Okisleniye i Obezuglerozhivaniye Stali*, Moscow, 1972, Izd-vo Metallurgiya, 336 pp

order to produce items with predetermined qualities, this layer must be removed, and that part of the metal is lost. The production of steel items becomes expensive and complicated.

All these facts indicate that the production of steel without the oxidation and decarburization processes is a very important problem for the national economy. This explains why the problem of the nonoxidative and non-decarburization heating of steel in furnaces is the focus of a great deal of attention in the Soviet Union and elsewhere. A considerable number of works have been published on this subject. Among such Soviet works are those of V. I. Arkharov, A. V. Smirnov and L. V. Beloruchev, V. F. Kopytov, V. A. Kuroyedov, A. A. Skvortsov, N. Yu. Tayts, A. A. Shmykov, I. N. Frantsevich, R. F. Voytovich, V. A. Lavrenko, L. A. Shvartsman, and others. Among foreign authors the following should be named: H. Tamman, C. Wagner, H. F. Mott, K. Hauffe, O. Kubashevski and B. Hopkins, A. J. Hochkiss, C. M. Webber, G. Benar, D. V. Marphy, V. E. Jomini, P. Cofstadt, and others.

Industrial workers also contribute to the decrease of oxidation and decarburization of steel. The combined efforts of scientists and engineers

3/14

USSR

LIFSHITS, I. I.

"Consideration of Errors in Measurement in the Use of Regression Analysis"

Opyt Primeneniya Prikl. Metodov Mat. i Vychisl. Tekhn. v Nar. Kh-ve [Experience in Application of Applied Methods of Mathematics and Computer Technology to the National Economy -- Collection of Works], Moscow, Statistika Press, 1972, pp 85-96 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V174, by Yu. Gromak).

Translation: In the linear regression equation $y = a_0 + a_1x + \eta$, independent variable x is measured with normal error ξ . Using the student distribution, confidence intervals are constructed for a_0 and a_1 .

1/1

LIFSHITS, I. M.

NEW BOOKS OF 'NAUKA' PUBLISHING HOUSE

[List, Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 41, No 10, October 1971, pp 129-131]

Mathematical, Physical and Technical Sciences

I. M. Lifshits, M. Ya. Asfel', and M. I. Kaganov. Elektron-naya teoriya metallov (Electronic Theory of Metals). Moscow, 1971, 416 pages, 9000 copies, 1 r 89 k.

V. A. Makhonin. O psikhomorfizme v avtomatike (Psychomorphism in Automation). Institute of Problems of Information Transmission. Moscow, 1971, 128 pages, 5700 copies, 46 k.

Osvoyeniye kosmicheskogo prostranstva v SSSR. 1957-1967 [The Mastering of Cosmic Space in the USSR (1957-1967)]. Institute of

- 203 -

JPRS 54678
10 Dec 1971

USSR

KONOVALOVA, A. I., et al., Problemy Prochnosti, No 12, Dec 1971, pp 19-23

fatigue strength of the vessels for selecting the minimum necessary level of prechilling. 5 figures. 4 references.

2/2

UDC 66.023-21.001.24

USSR

KONOVALOVA, A. I., KURANOV, B. A., LIFSHTS, L. A. (Balashikha)

APPROVED FOR RELEASE: 09/19/2001 **CIA-RDP86-00513R002201810011-5**
"Temperature Stresses in the Poured Product During Chilling by a Liquefied Gas"

Kiev, Problemy Prochnosti, No 12, December 1971, pp 19-23

Abstract: The article deals with the problem of temperature stresses in a spherical reservoir at the initial moment of pouring in the liquefied gas. Analyzing the temperature fields in the vessel at the initial moment of pouring permits the problem to be reduced to that of linking a hollow spherical cupola to an infinite spherical shell with an opening in the presence of a temperature-field discontinuity at the line of linkage. Formulas are given for determination of the basic internal force factors. Analysis of the experimental data shows that, when a product with a temperature of -90°C and lower is poured into the reservoir, considerable temperature stresses originate in the structure, that are capable of causing the destruction of the reservoir within a fixed number of chilling cycles. Preliminary chilling of the container wall can solve this problem. However, considering the considerable technological and design difficulties of prechilling, first priority must be directed to the development of methods of evaluating the thermal

1/2

USSR

UDC 669.15'292'293;295-194.2

SHCHERBAKOVA, V. S., SARRAK, V. I., LIFSHTS, L. S., and GRINBERG, N. A.,
All-Union Scientific Research Institute for Construction of Trunk Pipelines
and Central Scientific Research Institute of Ferrous Metallurgy imeni I. P.
Bardin

"Properties and Nature of Hardening Low-Alloy Steel Containing Small Quantities
of Niobium, Vanadium, and Titanium"

Moscow, Stal', No 6, Jun 71, pp 538-542

Abstract: Kinetics of niobium carbonitride separation in low-alloy ferritic steel containing 0.03% Nb, the role of the microstructure and dispersion hardening in developing properties, and the effect of rolling and normalization processes on properties of steel micro-alloyed only by niobium were investigated. It was found that the low-alloy steel containing 0.2% C, 1.15-1.4% Mn, and approximately 0.05% Nb begins to harden by aging in 2-4 hrs at 500°C as a result of separation of carbides, nitrides, and carbonitrides of niobium (phase NbC). The separation of this phase in austenite has little effect in changing the properties of steel with niobium, but a separation in ferrite promotes hardening. The developing embrittlement can be avoided by 1/2

- 64 -

USSR

SHCHENBAKOVA, V. S., et al., Stal', No 6, Jun 71, pp 538-542

rolling and normalization control. By the most effective alloying (Nb + V or Nb + V + Ti), a high complex of strength and plasticity properties can be obtained. The cold brittleness threshold of steel in the hot-rolled condition can be lowered by changing the rolling method. Four illustrations, four tables, nineteen bibliographic references.

2/2

USSR

UDC: 621.397

NIKIFOROV, D. D., SOINTSEV, A. A., LIFSHITS, M. A., YEFIMOV, I. I.

"A Device for Measuring the Time Interval Between the Midpoints of Video Pulses"

USSR Author's Certificate No 275851, filed 15 Jul 67, published 13 Oct 70
(from RZh-Radiotekhnika, No 5, May 71, Abstract No 5069 P)

Translation: The device is designed for measuring the time interval between the midpoints of video pulses in two sequences of identical frequency where the relative phase shift between sequences is such that the pulses of one sequence are within the limits of the pulses of the other sequence. The device contains time interval meters, and registration units, and is distinguished by the fact that measurement precision is improved by connecting the inputs of the device through differentiating links and a commutator to the inputs of the above-mentioned time interval meters. The outputs of these meters are connected through flip-flops to the registration unit.

1/1

USSR

UDC: 624.012:539.4

LIPSHITS, M.B.

"Investigation Results of Effect of Frequently Applied Load on Operation of Prestressed Reinforced Concrete Beams in Transverse Forces Zone of Action"

Novosibirsk, Sb. Nauch.-Tekhn. Conf. Posvyashch. 50-letiyu SSSR
(Symposium of Scientific-Technical Conference on 50-th Anniversary of USSR),
Novosibirsk Institute of Railroad Engineers, 1972, pp 47-48 (from Referativnyy
Zhurnal-Mekhanika, 1973, Abstract No 2V942)

Translation: Investigation was conducted on twelve I-beams with transversal reinforcement inside the wall. The beams had a height of 36 cm, wall thickness 4 cm and span 156 cm. The beams were tested with a load cycle characteristic $\xi = 0.4$ and loading frequency of 435 cycles per min. Short duration overloads cause inclined microcracks in concrete walls, result in decrease of resistance to fatigue cracks in inclined sections. This should be taken into account when calculating the wall resistance to cracks in prestressed reinforced concrete bridge beams. Failure of test beams under frequently applied load occurred through an inclined section by shear of compressed concrete and by brittle tension failure of transverse reinforcing bars where they cross the inclined crack.

1/1

172 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--BIOCHEMICAL CHARACTERISTICS OF STANDARD STRAINS OF BACTERIA
BELONGING TO GENUS CITROBACTER -U-
AUTHOR-(03)-RAGINSKAYA, V.P., LIFSHITS, M.B., BATURO, A.P.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,
PP 47-50
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FERMENTATION, BACTERIA, SALMELLA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0832 STEP NO--UR/0016/70/000/006/0047/0050
CIRC ACCESSION NO--AP0126509
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0126509
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT THE RESULTS OF
STUDYING FERMENTING PROPERTIES OF TEST STRAINS OF BACTERIA BELONGING TO
GENUS CITROBACTER. THIRTY FIVE SIGNS RECOMMENDED BY THE INTERNATIONAL
SUBCOMMITTEE ON ENTEROBACTERIACAE WERE TESTED; THEIR CONFORMITY TO THE
TOXONOMIC CHARACTERISTICS OF THE GENUS CITROBACTER WAS ESTABLISHED. IN
ASSOCIATION WITH SIMILAKITY OF FERMENTING PROPERTIES OF CITROBACTER,
SALMONELLA AND ARISOMA BACTERIA A PROPER COMPLEX OF DIFFERENTIAL
DIAGNOSTIC TESTS SHOULD BE APPLIED FOR THEIR IDENTIFICATION.
FACILITY: MOSKOVSKIY INSTITUT VAKTSIN I SYVOROTOK IM. MECHNIKOVA.

UNCLASSIFIED

USSR

UDC: 621.374.5(088.8)

SOLNTSEV, A. A., YEFIMOV, I. I., LIFSHITS, M. L.

"A Signal Shaper"

USSR Author's Certificate No 250214, filed 28 Oct 66, published 22 Jan 70 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G345 P)

Translation: A device is proposed for shaping a signal located on the time axis in the middle of a video pulse. The device contains a differential link and a delay unit. To improve the precision with which the shaped signal coincides with the middle of the video pulse, keys are connected between the differential link and the delay unit which serve to isolate signals corresponding to the front and cut-off of the video signal, and the leads from the delay unit are connected through coincidence circuits to memory elements which are connected to the load.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SOME DATA CONCERNING THE BRONCHOSCOPIC PICTURE OF PATIENTS WITH
CHRONIC PNEUMONIA -U-
AUTHOR--LIFSHITS, N.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 69-73
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PNEUMONIA, MEDICAL EXAMINATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0475 STEP NO--UR/0504/70/042/005/0069/0073
CIRC ACCESSION NO--AP0121149
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121149

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 99 PATIENTS WITH CHRONIC PNEUMONIA WERE SUBJECTED TO BRONCHOSCOPIC STUDY IN ITS DYNAMICS (185 BRONCHOSCOPIES). ON THE BASIS OF THE ANALYSIS OF THE DATA OBTAINED THE FOLLOWING FORMS OF BRONCHITIS ARE SINGLED OUT: CATARRHAL, MILDLY EXPRESSED HYPERTROPHIC, HYPERTROPHIC AND ATROPHIC. THE AUTHOR DISTINGUISHES DIFFUSE AND RESTRICTED NATURE OF BRONCHITIS PROCESS. CATARRHAL BRONCHITIS WAS OBSERVED IN 9 PATIENTS, MILDLY EXPRESSED HYPERTROPHIC, IN 17, HYPERTROPHIC, IN 29, ATROPHIC, IN 18. BRONCHITIS WAS OF A DIFFUSE NATURE IN 84 PATIENTS AND RESTRICTED IN 4. BRONCHOSCOPIC STUDY REVEALED NO INFLAMMATORY CHANGES IN BRONCHIAL MUCOSA IN 26 PATIENTS. PATIENTS WITH TRACHEOBRONCHIAL DYSKINESIA WERE REFERRED TO A SPECIAL GROUP. FACILITY: GRUPPA AKAD. AMN SSSR N. S. MOLCHANOVA.

UNCLASSIFIED

USSR

UDC 539.26

KORSUNSKIY, M. I., GENKIN, YA. YE., ZHURAKOVSKIY, YE. A., and LIFSHITS, V. G.

"X-Ray L_{β_2} Band of Niobium and K_{α} Band of Carbon in the Compound NbC"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-Matematicheskaya, No 4, Jul-Aug 72, pp 68-70

Abstract: The purpose of the article was to study the L and K spectra of Nb and C respectively in Nb-C system alloys and interpret them from the standpoint of the partial collectivization of valence electrons. The L_{β_2} band of Nb and K_{α} band of C in niobium monocarbide are broken down into components subject to the rigid requirements of the CLC model on the equality of the general energy parameters of both bands. Ideas about collective, locally bonding, and core electrons are used to interpret the emission bands of niobium and carbon. Band shape distortions are taken into consideration and the parameters of the parts of these bands that reflect electron states are determined. The widths of the short-wave parts of the L_{β_1} band of niobium and

1/2

USSR

KORSUNSKIY, M. I., et al., Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-Matematicheskaya, No 4, Jul-Aug 72, pp 68-70

K_{α} band of carbon are 4.2 ± 0.3 ev, which in the free electron approximation corresponds to a collectivization of $\sim 0.86 \pm 0.05$ electron per total volume of niobium and carbon atoms in the alloy.

2/2

- 58 -

1/2 041 UNCLASSIFIED PROCESSING DATE--300CT70
TITLE--SOME COMPENSATORY MECHANISMS OF THE TRACE ELEMENT METABOLISM
DISORDER IN PATHOLOGY -U-
AUTHOR--(05)--BALA, YU.M., AKSENOV, G.I., KOPYLOVA, L.M., LIFSHITS, V.M.,
PLOTKG, S.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 81--84
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES.

TOPIC TAGS--TRACE ELEMENT, PATHOLOGY, METABOLISM, ENZYME, NICKEL,
MAGNESIUM, VANADIUM, ERYTHROCYTE, PROTEIN, HYPOXIA, ANEMIA, BLOOD
CIRCULATION, MYOCARDIUM

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0264

STEP NO--UR/0504/70/042/004/0081/0084

CIRC ACCESSION NO--AP0127854

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AP0127854

ABSTRACT/EXTRACT—(U) GP-0— ABSTRACT. ON THE BASIS OF EXAMINATION OF 1200 PATIENTS WITH DIFFERENT DISEASES AND 300 ANIMAL THE AUTHORS DISCUSS THE ROUTES OF INVOLVEMENT OF TRACE ELEMENTS INTO THE COMPENSATORY AND ADAPTATIONAL PROCESSES. ONE OF THEM IS THE PARTICIPATION OF TRACE ELEMENTS IN ENZYMATIC REACTIONS. THREE MAIN COMPENSATORY MECHANISMS CAN BE SINGLED OUT; 1. A RESIDUAL ACCUMULATION OF NICKEL, MAGNESIUM, VANADIUM IN ERYTHROCYTES ESPECIALLY IN THE FRACTION OF NONHEMOGLOBIN PROTEINS OCCURS IN DIFFERENT HYPOXIC CONDITIONS (ANEMIA, CIRCULATORY INSUFFICIENCY). IT COULD BE ASSUMED THAT THIS ACCUMULATION IS ASSOCIATED WITH THE FUNCTION OF ENZYMES, WITH THEIR ACTIVIZATION WITH IONS OF HEAVY METALS. THIS REACTION DEVELOPS RATHER EARLY AND DOES NOT DEPEND UPON THE CASES PROVOKING HYPOXY. 2. PATHOLOGICAL AFFECTATION OF A PORTION OF SOME IMPORTANT ORGAN NECESSITATES AND INTENSIFIED FUNCTIONING OF INTACT PORTIONS. THE CONTENT OF A NUMBER OF BIOLOGICALLY IMPORTANT TRACE ELEMENTS DECREASES AND IN THE SURROUNDING AREA, INCREASES. THE MENTIONED COMPENSATORY SHIFTS ARE ASSOCIATED WITH PECULIARITIES OF METABOLISM IN THESE TISSUES AND DEPEND UPON THE STAGE OF THE DISEASE. 3. DISTINCT PARTICIPATION OF TRACE ELEMENTS IN COMPENSATORY REACTIONS IS OBSERVED IN SO CALLED "ACUTE SYNDROMES" DEVELOP IN MYOCARDIAL INFARCTION. FACILITY: KAFEDRA FAKUL'TETSKOY TERAPII AND TSENTRAL'NAYA N-I LABORATORIYA VORONEZHSKOGO MEDITSINSKOGO INSTITITA.

UNCLASSIFIED

USSR

UDC 519.9

LIKSHITS, V. N., and SADOVSKIY, L. YE.

"Algebraic Models of Computers"

Moscow, Uspekhi Matematicheskikh Nauk, Vol 27, No 3, May-Jun 72, pp 79-125

Abstract: The article, which is essentially the revised text of papers delivered by the authors at the Joint Seminar on Applied Questions in Algebra of the Higher Algebra Chair of Moscow State University and the Applied Mathematics Chair of the Moscow Institute of Transportation Engineers, contains a review of the principal areas of research in the construction and analysis of algebraic models of digital computers (so-called mathematical computers). The first part of the article deals with models based on the scheme suggested by V. M. GLUSHKOV for data conversion from the standpoint of the theory of automata. A review is then given of works in which mathematical computers and programming theory are considered in terms of the theory of categories. Models of this type were first proposed by A. A. LYAPUNOV. The article concludes by offering a modified algebraic computer model, with allowance for the principal elements of constructing a computer, the possibility of

1/2

USSR

LIFSHTS, V. N., and SADOVSKIY, L. YE., Uspekhi Matematicheskikh Nauk, Vol 27, No 3, May-Jun 72, pp 79-125

imbedding programs into it, and questions of the functioning of a program imbedded into its memory. The proposed model permits consideration of a number of problems in digital computer theory in terms of transformation semigroups of a special form -- microprogram semigroups. The main difference between this model and the LYAPUNOV model is that a narrower range of elementary transformations is considered from the very start. These transformations are connected with the structure of operations on the memory and on the set of states of the cells of the mathematical computer. The proposed method of constructing an algebraic model is illustrated by the example of a simplified conditional computer possessing a number of characteristic features found in a real digital computer.

The authors thank A. A. LYAPUNOV, D. YA. LEVIN, and seminar participants for discussing the work and for useful recommendations.

2/2

- 70 -

USSR

UDC: 577.4

LIFSHITS, V. N. and SADOVSKIY, L. Ye.

"Some Methods of the Formal Description of Mathematical Machines"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Transactions of the Moscow Institute of Railroad Engineering) No 385, 1971, 155-249 (from RZh--Matematika, No 8, 1972, Abstract No 8V427)

Translation: Basic concepts in a single algebraic language and the results of the theory of discrete transformations are given (RZhMat, 1966, 11V268). A detailed description is given of the approaches to simulating real electronic computers using essentially different algebraic means (RZhMat, 1963, 10V363, 10V364, 5V435). The authors' proposed model differs from the known model (RZhMat, 1963, 10V363) by its more rigorous limitations on machine memory and on the set of memory cell conditions. With the use of this equipment, a description is given of the simplest computer. V. Gurlov

1/1

- 54 -

USSR

UDC: 681.3.06:51

ROZENKNOP, V. D., ROYTVAN, A. I., LIFSHITS, V. N.

"Expanding the Library of Standard Programs for the TAM-22 Translator"

V sb. Primeneniye vychisl. tekhn. v elektrotekhn. prom-sti (Using Computer Technology in the Electrical Engineering Industry--collection of works), Moscow, 1971, pp 272-274 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V591)

[No abstract]

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ELASTOMER OSCILLATORS -U-
AUTHOR--(03)-ZABREYKO, P.P., KRASNOSELSKIY, M.A., LIFSHITS, YE.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 190, NO 2, 1970, PP
266-269
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELASTOMER, OSCILLATOR THEORY, ELASTIC MODULUS, LIPSCHITZ
CONSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REF/FRAME--1980/0503 STEP NO--UR/0020/70/190/002/0266/0263
CIRC ACCESSION NO--AT0048748
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0048748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUATION FOR THE OSCILLATIONS OF A POINT MASS ON A ONE DIMENSIONAL ELASTOMER IS STUDIED. IF $x(t)$ IS THE COORDINATE OF AN OSCILLATING POINT N OF MASS M AND THE FOLLOWING FORCES ACT ON THE POINT N AT TIME T: A VARIABLE EXTERNAL FORCE $F(t)$, FRICTION, THE STRESS OF THE ELASTIC ELEMENT GIVEN BY HOOK'S LAW, AND THE STRESS ϕ OF THE ELASTOMER, THE MOTION OF THE POINT N IS EXPRESSED BY AN EQUATION (SHOWN ON MICROFILM). THE STRESS OF THE ELASTOMER IS GIVEN BY A FORMULA (SHOWN ON MICROFILM) WHERE $F(x, z)$ IS A FUNCTION DESCRIBING THE STRESS OF AN INFINITESIMAL ELEMENT OF THE ELASTOMER AND μ IS A MEASURE DESCRIBING THE DISTRIBUTION OF THE ELASTIC MODULUS WITH RESPECT TO THE PARAMETER ALPHA, THEOREMS ARE PROVED STATING THE CONDITIONS UNDER WHICH AN EQUATION (SHOWN ON MICROFILM) HAS A UNIQUE SOLUTION. THE THEOREMS HOLD WHEN ϕ IS DETERMINED BY THE FORMULA IF IT IS ASSUMED THAT THE NONLINEAR FUNCTION SATISFIES THE LIPSCHITZ CONDITION WITH RESPECT TO THE VARIABLE.

UNCLASSIFIED

Miscellaneous

UDC 517.9+539.214

USSR

ZABREYKO, P. P., KRASNOSEL'SKIY, M. A. and LIFSHITS, YE. A., Voronezh State University, Institute of Automation and Telemechanics (Technical Cybernetics), Academy of Sciences USSR, Moscow

"Elastomer Oscillators"

Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 2, 1970, pp 266-268

Abstract: The equation for the oscillations of a point mass on a one-dimensional elastomer is studied. If $x(t)$ is the coordinate of an oscillating point N of mass m and the following forces act on the point N at time T : a variable external force $f(t)$, friction, the stress of the elastic element given by Hook's law, and the stress $\bar{\sigma}$ of the elastomer, the motion of the point N is expressed by the equation

$$m \frac{d^2 x}{dt^2} + b \frac{dx}{dt} + Ex + \bar{\sigma} = f(t).$$

If the stress of the elastomer is given by the formula

$$\bar{\sigma} = \int_M F(\alpha, \Gamma[x, l_-(\alpha), l_+(\alpha), l_0(\alpha)](t)) d_\mu(\alpha), \quad (1)$$

where $F(\alpha, Z)$ is a function describing the stress of an infinitesimal element

1/2

USSR

ZABREYKO, P. P., et al, Doklady Akademii Nauk SSSR, Vol. 190, No. 2, 1970, pp 266-268

of the elastomer and μ is a measure describing the distribution of the elastic modulus with respect to the parameter α , theorems are proved stating the conditions under which the equation

$$m \frac{d^2 x}{dt^2} + b \frac{dx}{dt} + Ex + \int_M \Gamma[x, l_-(\alpha), l_+(\alpha), l_0(\alpha)](t) d\mu(\alpha)$$

has a unique solution. The theorems hold when ϕ is determined by formula (1) if it is assumed that the nonlinear function $F(\alpha, l)$ satisfies the Lipschitz condition with respect to the variable l .

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--OSCILLATORY APPROACH TO SINGULAR POINT IN THE OPEN COSMOLOGICAL
MODEL -U-
AUTHOR--(02)-LIFSHITZ, E.M., KHALATNIKOV, I.M.
COUNTRY OF INFO--USSR
SOURCE--JETP LETTERS (USA), VOL. 11, NO. 3, P. 200-3 (FEB. 1970)
DATE PUBLISHED----FEB 70
SUBJECT AREAS--MATHEMATICAL SCIENCES
TOPIC TAGS--COSMOLOGY, OSCILLATION, MATHEMATIC SPACE, MATHEMATIC MODEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1781 STEP NO--US/0000/70/011/003/0200/0203
CIRC ACCESSION NO--AP0133686
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133686

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSES A MODEL WITH HOMOGENEOUS SPACE OF TYPE VIII WHICH NOT ONLY CONFIRMS THE QUALITATIVE ANALYSIS OF THE GENERAL COSMOLOGICAL SOLUTION OF EINSTEIN'S EQUATION BUT ALSO PROVIDES NEW INFORMATION ON CERTAIN ASPECTS OF THE PROBLEM OF A SINGULARITY HAVING A COMPLICATED OSCILLATORY CHARACTER.
FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

USSR

UDC: 577.4

LIFSHITS, V. N., SADOVSKIY, L. Ye.

"Concerning Some Methods of Formal Description of Mathematical Machines"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Works of the Moscow Institute of Railway Transportation), 1971, vyp. 385, pp 155-249 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V427)

Translation: Basic concepts and results of the theory of discrete converters are presented in a common algebraic language (RZhMat, 1966, 11V268). A detailed description is given of approaches to modeling of actual computers which use completely different algebraic software (RZhMat, 1963, 10V363, 10V364, 5V435). The model proposed by the authors differs from the one given in RZhMat, 1963, 10V363 in placing stronger limitations on the computer memory and on the set of states of the memory cells. A very simple computer is described by using the notational system developed in the paper. V. Gorlov.

1/1

- 20 -

1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--REGULAR AND STOCHASTIC VIBRATIONS DEPENDENT ON BEAM INSTABILITY
STUDIED FROM LUMINOUS RADIATION OF THE PLASMA -U-
AUTHOR-(02)-LIFSHITS, YE.V., KORNILOV, YE.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. TEKH. FIZ. 1970, 40(5), 996-1004
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PLASMA BEAM, PLASMA INSTABILITY, VIBRATION SPECTRUM,
AUTOCORRELATION FUNCTION, PLASMA RADIATION, VIBRATION FREQUENCY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0927 STEP NO--UR/0057/70/040/005/0996/1004
CIRC ACCESSION NO--AP0131513

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0131513
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENT OF AUTOCORRELATION FUNCTIONS (ACF) IS AN EFFECTIVE METHOD OF INVESTIGATING REGULAR AND STOCHASTIC VIBRATIONS EXCITED IN PLASMA BEAM DISCHARGES AS A RESULT OF DEVELOPMENT OF INSTABILITY. AT BEAM INSTABILITIES, THE VIBRATION SPECTRUM WAS STUDIED EXPTL. IN A CONTINUOUS PLASMA BEAM DISCHARGE. ACF, FREQUENCY SPECTRUM, AND SPECTRAL D. OF VIBRATION ENERGY WERE CALCD. FROM OSCILLOGRAMS, INDICATING THE TIME VARIATION OF THE INTENSITY OF VISIBLE RADIATION EMITTED. FOR REGULAR VIBRATIONS, ACF AND THE FREQUENCY SPECTRUM OF THE PROBE CURRENT (OETD. EXPTL. BY RADIO FREQUENCY METHODS), OF THE "INTEGRAL" LIGHT RADIATION, AND OF THE LINES 4922 AND 4713 ANGSTROM OF HE ARE VERY SIMILAR. THE SAME TYPE OF SIMILARITY, IN GENERAL, IS FOUND FOR THE TRANSITION FROM REGULAR TO STOCHASTIC OSCILLATIONS WHICH ARE PRODUCED BY A CHANGE OF PRESSURE. THE DIFFERENCES FOUND, ON DETAILED ANAL., ARE PROBABLY DUE TO THE COLLISION FREQUENCY OF ELECTRONS WITH NEUTRAL ATOMS BEING GREAT IN COMPARISON WITH THE APPLIED FREQUENCY. INCREASE OF THE FREQUENCY OF OSCILLATION AND OF THE INTENSITY OF THE LINES SHOWS THAT THE LOW FREQUENCY OSCILLATIONS INFLUENCE THE TEMP. OF THE PLASMA SIGNIFICANTLY. THIS IS VERIFIED EXPTL. THE INFLUENCE OF HIGH FREQUENCY MODULATION ON THE INSTABILITY IS ALSO STUDIED BY OPTICAL CORRELATION METHODS. THE RESULTS OF INVESTIGATIONS BY OPTICAL AND BY RADIOPHYS. METHODS AGREE WELL WITH EACH OTHER.

UNCLASSIFIED

USSR

UDC 533.92:621.039.61

KOVPIK, O. F., KOLYADA, Yu. Ye., KORNILOV, Ye. A., LIPSHITS, Ye. V.,
NEKRASHEVICH, S. A.

"The Effect of External High-Frequency Modulation of an Electron Beam on
Ion Heating Upon Interaction of the Beam With a Plasma"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb.
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion.
Republic Interdepartmental Collection), 1972, No. 3, pp 15-23 (from
RZh-Fizika, No 11, Nov 72, Abstract No 11C284)

Translation: The effect of external high-frequency beam modulation on the heating of ions and electrons in a magnetic trap under conditions of beam instability is investigated experimentally. Under beam modulation at a frequency less than the electron-plasma frequency there is observed an increase in the low-frequency fields with a simultaneous increase in both the temperature and the number of accelerated ions. It is hypothesized that acceleration of ions in fields of low-frequency oscillations, the excitation of which is caused by nonlinear interaction of high-frequency

1/2

USSR

KOVPIK, O. F., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza.
Résp. mezhved. sb., 1972, No. 3, pp 15-23

oscillations, is of a stochastic nature. The experiment was conducted on an electron beam with an energy up to 20 kev and a current up to 20 a in a magnetic field of mirror configuration 3-1-3 kgauss.

2/2

- 55 -

Materials

USSR

UDC 666.593.5

ISAYEVA, V. F., LIESHTS, YU. A., FRIDBERG, I. D., KHRUSTALEVA,
V. V., CHERKUDINOV, A. S.

"A Ceramic Material"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy,
Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275192, Class
No 21, filed 31 Mar 69, p 46

Abstract: This Author's Certificate introduces a ceramic material based on silicon and titanates. As a distinguishing feature of the patent, a material with low dielectric dissipation factor in the SHF range is produced by using a sinter of forsterite and magnesium orthotitanate as the initial components of the charge, with forsterite making up as much as 50 percent of the total weight of the components.

1/1

USSR
Engineering
Aeronautical and Space

USSR

UDC 629.78.015:533.6.015.04

IGNAT'YEV, S. G., LIFSHITS, Yu. B.

"Toward a Theory of Sonic Flow Over a Profile"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1972, Vol. 3, No. 4, pp 9-13 (from RZh-41. Raketostroyeniye, No 11, Nov 72, Abstract No 11.41.101)

Translation: A previously given empirical formula relating pressure with the local incidence angle at the tail section of a profile in a flow that is sonic at infinity is derived. The problem of the optimal shape of the tail of the profile is solved with the aid of this formula. 1 ill., 6 ref. Resume.

1/1

USSR

UDC 533.697

KIREYEV, V. I., LIESHITS, YU. B., MIKHAILOV, YU. YA.

"Solution of the Direct Problem of the Laval Nozzle"

Uch. zap. Tsentr. aerogidrodinam.in-ta (Scientific Notes of the Central Aerodynamics Institute), Vol 1, No 1, 1970, pp. 8-13 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10 B337)

Translation: This article contains a discussion of the possibility of calculating the flow in the input section of: planar and axisymmetric nozzles with the help of the method of fixing based on the implicit difference scheme. The hyperbolic system of equations of nonstationary isentropic motion of an ideal gas is written in cylindrical coordinates x and r . On the axis of symmetry of the nozzle and the wall $r = R(x)$, the sealing conditions are given; when $x \rightarrow -\infty$ all the parameters are considered constant with respect to cross section, but their values are calculated during the calculation process (in the calculation mode it is possible to pass only a fully defined flow of gas which cannot be given in advance through the nozzle). The numerical solution is found in the

1/2

USSR

KIREYEV, V. I., et al., Uch. zap. Tsentr. aerogidrodinam. in-ta (Vol. 1, No 1, 1970, pp 8-13

variables $\xi = r/R(x)$, $\eta = \eta(x, r)$ realizing mapping of the inside of the given nozzle onto the inside of a fixed rectangle. For the difference approximation of the system, four and six point implicit schemes are used. The system of nonlinear difference equations obtained is solved by the pass method. A graph is presented for the line $\lambda = \text{const}$ in a round nozzle $R(x) = 1 - (2\text{ch } 2x)^{-1} + \gamma x^2$ ($\gamma = 0$ for $x < 0$, $\gamma = 0.24$ for $x > 0$), and it is compared with the known solution of the inverse problem. The bibliography has 9 entries.

2/2

USSR

UDC 621.357.7.035-52(088.8)

GRANOVSKIY, I. B., LIFTMAN, I. B., and SKOBLIKOV, R. I.

"Auto-operator for Galvanic Lines"

Author's Certificate No 316755, filed 28 Nov 69, published 24 May 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L339P)

Translation: An auto-operator is patented for the galvanic lines which contains a mechanism for transfer, a mechanism for lifting having a flexible traction device, and a clamp for the hangers. It is improved in that in order to increase the reliability, it is provided with an apparatus for accidental disconnections accomplished by a double arm lever, one end of which is connected to a sensor for the accidental shut off and the other with assemblies for the deflection of the flexible traction device.

1/1

- 12 -

USSR

UDC 539.3

LIGAY, L. B., CHUDAYEV, Ya. F., GARIPOV, M. Sh.

"Bending of a Square Plate With Two Restrained and Two Free Edges"

V sb. Materialy k predstoyashch. nauch.-tekhn. konf. Sib. metallurg. in-t. Sekts. stroit. proiz-va. Vyp. 3 (Materials for a Forthcoming Scientific-Technical Conference. Siberian Metallurgical Institute. Construction Industry Section. No. 3 -- Collection of Works), Novokuznetsk, 1972, pp 200-206 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V189)

Translation: The stress-deformation state of a thin elastic square plate under the action of a uniformly distributed surface of a load perpendicular to the middle of the surface is discussed. Two adjacent edges of the plate are rigidly constrained and the two others are free. The differential equation from the theory of plates is solved on a computer by the grid method with a step equal to $1/8$ of the length of a side of the plate. Values of the bends of the plate are given in tabular form. G. K. Aksentyan.

USSR

UDC 627.81(47+57)

MAKAROV, A. I., LIGUN, O. S.

"Technical-Economic Classification of the USSR Reservoirs"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of Coordinating Meetings on Hydroengineering), No 59, 1970, pp 162-168 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D51)

Translation: There are 968 reservoirs with a capacity greater than 1 million m^3 in operation in the USSR. All the reservoirs are divided into 3 categories with respect to total volume: >50 million m^3 , 10-50 million m^3 and 1-10 million m^3 . The reservoirs with thermoelectric power plants are considered separately. The classification of the largest reservoirs with a volume greater than 50 million m^3 of which there are 200 in the USSR is investigated in detail. A brief survey of existing methods of classifying reservoirs is presented. It is proposed that the reservoirs of this group be classified with respect to two attributes -- area of flooded lands which characterizes the economic loss from creation of the reservoirs and the useful volume reflecting the national economic effect. These attributes are used to separate the reservoirs into giants (with a flooded area greater than 100,000 hectares and a useful volume greater than 8 km^3), large (indexes of 10,000 to 100,000 hectares and 0.8-8 km^3), average (3,000 to 10,000 hectares and 0.1-0.8 km^3) and small (1,000 to 3,000 hectares

1/2

USSR

MAKAROV, A. I., et al., Tr. koordinats. soveshchaniy po gidrotekhn., No 59, 1970, pp 162-168

and 0.05-0.1 km³). The distribution of all the reservoirs of the USSR with a volume greater than 50 million m³ with respect to the four mentioned groups is presented. The concept of the most important reservoirs which have total flooding indexes and useful volume greater than 90 percent of the corresponding indexes of all 968 reservoirs of the USSR is also introduced. There are 3 tables and a 7-entry bibliography.

USSR

CHICHENIN, P. I., ADILOV, D. A., YUSUPOV, K. Yu., SHARIPOV, M. K., PULATOV, Ya. G., LI GVAN KHVA, V. T., ASZHANOV, N. A., and DEHUTAYEV, Ya. D.; Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"Epidemiological Characteristics of Anthrax in Uzbekistan During Recent Years"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

Abstract: In 1949-60 the incidence of anthrax affecting human beings decreased by a factor of three in the Uzbek SSR from that in 1925-48, mainly as a result of immunization of occupationally exposed persons. In recent years the over-all incidence of anthrax among both humans and animals in the Uzbek SSR was reduced by effective prophylactic measures. However, there is no room for complacency, in view of the fact that there was in 1949-60 and especially in 1961-70 an increase in the relative weight of group infections connected with the uncontrolled utilization of meat and of other animal products after obligatory slaughter of diseased farm animals, particularly in the private sector. During the period under consideration, the frequency of anthrax in the Uzbek SSR exceeded that in the USSR by a factor of 3-4, with the number of cases in the Uzbek SSR comprising 10-16% of that in the entire USSR. On the basis of data covering the

1/2

USSR

CHICHENIN, P. I., Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

incidence of anthrax in the past 20 yrs, one can differentiate between three zones in the Uzbek SSR: I) A zone of stable incidence among humans and animals (Tashkentskaya, Surkhandar'inskaya, and Samarkandskaya Oblasts); II) A zone with periodic outbreaks (Andizhanskaya, Khorzemsкая, and Kashkadar'inskaya Oblasts and the KKASSR); III) The zone with the most satisfactory conditions (Bukharskaya, Syrdar'inskaya, Namanganskaya, and Ferganskaya Oblasts). The ratio of cases of human anthrax to those in the entire Uzbek SSR was 62.33, 35.25, and 2.42% in zone I, II, and III, respectively, and that of anthrax of animals 67.13, 32.02, and 0.85% in zone I, II, and III, respectively. In view of the fact that the infection remains in the soil, prophylactic measures in locations at which anthrax has occurred must be carried out constantly regardless of the time that has elapsed since the last outbreak and these measures reinforced at times at which digging into the ground takes place, e.g., in connection with agricultural irrigation.

2/2

USSR

UDC 621.391.8:519.27

ASTRATOV, O. S., LIKARPENKOV, V. G., SORIN, V. Ya.

"Problems of Spectrum Conversion in Variable Transposition"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aircraft Instrument Building), 1971, vyp. 69, pp 26-32 (from RZh-
-Radiotekhnika, No 7, Jul '71, Abstract No 7A50)

Translation: The authors analyze passage of a harmonic signal through a system which provides time transposition of its individual sections. It is shown that the spectrum of the output signal contains a set of harmonics which are symmetrically arranged relative to the frequency of the input signal at a distance which is a multiple of the transposition period. It is proved that individual harmonics in the output signal spectrum (including harmonics on the input signal frequency) may be absent for certain frequencies with some transposition laws. Resumé.

1/1

USSR

UDC 612.1 UNCLER ./11+591.111

LIKHACHEV, A. I., LEGEN, I. L., and YUZEFOVICH, G. M.

"The Effects of an Alternating Magnetic Field on Skin Permeability"

Baku, Izvestiya Akademii Nauk Azerbaydzhan SSR, No 3, 1972, pp 99-102

Abstract: The effects of an alternating magnetic field (AMF) on the permeability of human skin to Evans blue dye were studied with 2 groups of people. One group (18 women, 7 men, 18-44 years old) received 0.5 ml of 0.5% Evans blue intracutaneously into the lower third of the shank on one leg. The leg was positioned between electromagnetic terminals, with the injected area in contact with terminal surface. That leg was exposed to AMF for 5 minutes under the following conditions: 450 oersted field, 73 cm gap, and current potential of 220 V and 50 cps. The other leg served as a control; it was similarly located but the current was not applied. Another group of 25 subjects was injected with Evans blue that had previously been subjected to AMF under the conditions described. The diameters of the dye spots were measured immediately after injection and 24 h following AMF treatment. Analysis of the results showed that AMF increased tissue permeability to Evans blue in both groups;

1/2

USSR

LIKHACHEV, A. I., et al., Izvestiya Akademii Nauk Azerbaydzhan SSR, No 3, 1972, pp 99-102

in the second group, the AMF pretreated dye was resolved more rapidly. The latter effects were presumably due to delocalization of the π electrons on the dye molecule. The more rapid spread of dye through the cutaneous tissues was presumably due to the direct effects of AMF on capillaries and on the reflex vasodilatation mechanism.

2/2

- 78 -

USSR

UDC 631.547.04:633.11

LYKHACHEV, B. S., and BARKHATOVA, L. I., [VIR -- unknown abbreviation]

"The Effect of Chlorocholine Chloride on the Quality of Winter-crop Wheat Seeds"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 10 (120), 1973, pp 60-61

Abstract: It has been shown that application of tur in the optimal dose of 4 kg/hectare improved the planting quality of the seeds of winter-crop wheat. This was especially effective in case of the strains subject to tumbling. Treating the plants with chlorocholine chloride lowered the mass of seeds of the new crop, but their energy of germination and vitreousness was increased.

1/1

1/2 028

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--INFLUENCE OF THE MAGNETIC FIELD ON THE LONGITUDINAL DISTRIBUTION OF
THE MEAN ANNUAL IONIZATION CHARACTERISTICS IN THE F2 LAYER -U-

AUTHOR--LIKHACHEV, M.A.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIJA, VOL. 10, NO. 2, 1970, P. 338-340

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, ATMOSPHERIC SCIENCES, EARTH
SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--F LAYER, IONIZATION, GEOMAGNETIC FIELD, SOLAR ACTIVITY,
GEOGRAPHIC LATITUDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0149

STEP NO--UR/0203/70/010/002/0338/0340

CIRC ACCESSION NO--AP0119145

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119145

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE LONGITUDINAL DISTRIBUTION OF THE MEAN ANNUAL MIDDAY IONIZATION CHARACTERISTICS AT MEDIUM LATITUDES. THE OBTAINED RESULTS INDICATE THAT: (1) THE INFLUENCE OF THE GEOMAGNETIC FIELD ON THE IONIZATION STATE OF THE F2 LAYER IS PROPORTIONAL TO THE MEAN SOLAR ACTIVITY LEVEL; (2) THE MEAN ANNUAL IONIZATION LEVEL IN THE F2 LAYER LOCATED NEARER TO THE MAGNETIC NORTH POLE; AND (3) THE MAGNITUDE OF THE LATTER PHENOMENON IS GOVERNED BY THE MEAN ANNUAL SOLAR ACTIVITY LEVEL. FACILITY: TOMSKII GOSUDARSTVENNYI UNIVERSITET, TOMSK, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CERTAIN FEATURES OF THE RELATION BETWEEN GEOMAGNETIC AND SOLAR
ACTIVITY -U-
AUTHOR--LIKHACHEV, M.A.
COUNTRY OF INFO--USSR
SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 365-367
DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--GEOMAGNETIC ACTIVITY, SOLAR ACTIVITY, GEOMAGNETIC STORM, SOLAR
CYCLE, SOLAR TERRESTRIAL INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0157

STEP NO--UR/0203/10/010/002/0365/0367

CIRC ACCESSION NO--AP0119153

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119153

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE NONUNIFORM NATURE OF THE RELATIONSHIP BETWEEN GEOMAGNETIC STORM INTENSITY AND THE 27 DAY STORM RECURRENCE CYCLE. AVAILABLE DATA FOR THE PERIOD FROM 1900 TO 1964 SHOW BOTH INCREASING AND DECREASING TENDENCIES OF RECURRENCE WITH INCREASING INTENSITIES. THIS APPARENT CONTRADICTION IS EXPLAINED BY THE FACT THAT THE PERIOD FOR WHICH THESE DATA ARE AVAILABLE COMPRISES SEVERAL 11 YEAR SOLAR ACTIVITY CYCLES LYING NEAR THE APEX OF THE ASCENDING SEGMENT OF THE SECULAR ACTIVITY SURVE AND CHARACTERIZED BY SEVERAL DISTURBANCES OF THE REGULARITY OF THE EARTH SUN INTERACTIONS.

FACILITY: AKADEMIIA NAUK GRUZINSLOI SSR, INSTITUT GEOFIZIKI, FIFLIS, GEORGIAN SSR.

UNCLASSIFIED

USSR

UDC: 619:614.21.08

LIKHACHEV, N. V.

"Work of the Laboratory for the Control of Antiviral Biologicals"

Moscow, Veterinariya, No 2, 1971, pp 41-43

Abstract: In 1931 the newly organized State Scientific Control Institute for Veterinary Biologicals created a virology laboratory with V. P. Alekseyev as its head. It has been directed since 1937 by the author. During the past 40 years the laboratory has engaged in a variety of practical and scientific tasks. It has helped to put various biologicals into large-scale production, checked on their effectiveness on farms, and taken part in drawing up instructions for the preparation and use of serums and vaccines. The laboratory has also made important contributions to the study of such diseases as plague, Newcastle disease, Anjeszky's disease, and rabies.

1/1

USSR

UDC 669.71.042.6

LIXIACHEV, R. B., PETRICHENKO, A. M.

"Kinetics of Shrinkage of Aluminum Alloys in Liquid and Liquid-Solid States"

Usadochn. protsessy v splavakh i otlivkakh -- V sb. (Shrinkage Processes in Alloys and Castings -- collection of works), Kiev, Naukova Dumka Press, 1970, pp 251-253 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G190)

Translation: A study of alloy shrinkage and also the development of measures to control defects of shrinkage origin are basic areas in the theory and practice of casting. A procedure for studying the shrinkage of aluminum alloys during the crystallization process is discussed. There are 2 illustrations.

1/1

- 5 -

1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ON THE CLASSIFICATION OF ACUTE CHOLECYSTOPANCREATITIS -U-
AUTHOR--LIKHACHEV, V.A. L
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 2, PP 30-34
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PANCREATITIS, LIVER FUNCTION, CLINICAL MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1732 STEP NO--UR/0531/70/000/002/0030/0034
CIRC ACCESSION NO--AP0103496
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--09UCT70

CIRC ACCESSION NO--AP0103496

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASING UPON STUDIES OF 425 CASE HISTORIES OF PATIENTS SUFFERING FROM ACUTE CHOLECYSTOPANCREATITIS THE AUTHOR PROPOSES A CLINICAL MORPHOLOGICAL CLASSIFICATION OF THE LATTER. BY THE CHARACTER OF ITS COURSE ACUTE CHOLECYSTOPANCREATITIS IS EXPEDIENT TO DIVIDE IT INTO TWO FORMS, PRIMARY AND RECURRENT. IN BOTH INSTANCES THE DISEASE MAY RUN AN ACUTE, MODERATELY SEVERE AND SEVERE COURSE.

UNCLASSIFIED

USSR

UDC 669.71:539.375

LIKHACHEV, V. A., VLADIMIROVA, G. V., MYSHLYAYEV, M. M., and OLEVISKIY, S. S.,
Physicotechnical Institute imeni A. F. Ioffe and Institute of Solid State Physics,
Academy of Sciences USSR

"Aluminum Work Hardening at Temperature Discontinuities in the Process of Creep"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 6, Jun 79, pp 1260-1267

Abstract: Results are presented of the experimental investigation of increased creep strength of metals resulting from time reduction of temperature in the process of deformation. It is observed that work hardening of metal is clearly manifested only when a considerable density of dislocation loops originates in the boundaries of blocks and near them. It is shown that work hardening involves preliminary deformation of creep, develops in time, and is sensitive to stress and temperature-velocity conditions. The nature of work hardening of metals is discussed. The authors thank V. L. Indenbom, A. N. Orlov, and V. I. Vladimirov for their interest in the work and for discussing the results.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--IRREVERSIBLE YIELD STRESS COMPONENT OF METALS WITH AN FCC LATTICE
-U-

AUTHOR--(02)--CHUCHMAN, T.N., LIKHACHEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, VOL. 29, FEB. 1970, P. 381-386

DATE PUBLISHED----FEB70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ALUMINUM, TANTALUM, IRON, BIBLIOGRAPHY, STRAIN HARDENING,
YIELD STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0896

STEP NO--UR/0126/70/029/000/0381/0386

CIRC ACCESSION NO--AP0116406

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NC--AP0116406

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. STUDY OF THE IRREVERSIBLE YIELD STRESS COMPONENT OF ALUMINUM, ARMCO IRON, AND TANTALUM. IT IS SHOWN THAT THIS COMPONENT IS DEPENDENT ON TEMPERATURE. AN EMPIRICAL EXPRESSION IS OBTAINED FOR THE RELATION BETWEEN THIS COMPONENT AND STRAIN HARDENING, AS WELL AS COARSE TRANSVERSE SLIP. IT IS SUGGESTED THAT THE EFFECT OF TEMPERATURE ON THE CHARACTERISTICS OF THE DEFORMATION STRUCTURE IS ESSENTIALLY DETERMINED BY THE INTENSITY OF THE COARSE TRANSVERSE SLIP. FACILITY: AKADEMIYA NAUK SSSR, FIZIKO-TEKHNIЧЕСКИЙ ИНСТИТУТ, ЛЕНИНГРАД, СССР.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE ADIABATIC S MATRIX AND THE QUASIPARTICLES -U-
AUTHOR--(03)-LIKHACHEV, V.N., TYUPKIN, YU.S., SHVARTS, A.S.
COUNTRY OF INFO--USSR
SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 2, NR 1, PP
3-29
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--S MATRIX, HAMILTONIAN, IDEAL GAS, FERMI STATISTICAL THEORY,
EXCITED STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1978/1230 STEP NO--UR/0646/70/002/001/0003/0029
CIRC ACCESSION NO--AP0046153
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0046153

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. THE ADIABATIC S MATRIX S SUBALPHA FOR NORMAL FERMI SYSTEMS IS STUDIED. THE EXPRESSIONS ARE OBTAINED FOR ITS ELEMENTS WITH SMALL VALUES OF α . THE CONNECTION IS ESTABLISHED BETWEEN THE OPERATORS S SUBALPHA AND THE SCATTERING MATRIX FOR PHYSICAL QUASI PARTICLES. THE UNITARY OPERATOR IS CONSTRUCTED WITH TRANSFORMS THE HAMILTONIAN UNDER CONSIDERATION INTO THE HAMILTONIAN OF IDEAL GAS WITH ACCURACY UP TO MEMBERS WHICH ARE NOT ESSENTIAL WHEN WE ANALYZE THE WEAKLY EXCITED STATES.

UNCLASSIFIED